

VIRGINIA INHALATION TOXICOLOGY ADVISORY GROUP

MINUTES SIXTH MEETING September 9, 2009

TIME AND PLACE: 10:00AM – 1:00 PM
DEQ Central Office
629 E. Main Street
Richmond, VA 22469
2nd Floor Conference Room

PRESIDING: Patricia McMurray, DEQ Risk Assessor Program Manager

MEMBERS PRESENT:

Jim Gould, Sierra Club
Chris Bednar, Smurfit Stone
John Morris, Ph.D., University of Connecticut (SOT)
Debbie Mulrooney, DuPont (VMA) – by phone
Kevin Wallace, M. D., University of Virginia – by phone
Kimber White, Ph. D., Virginia Commonwealth University
Robert Corley, Ph.D., Virginia State University
Dwight Flammia, Ph.D., Virginia Department of Health

DEQ STAFF PRESENT:

Patty Buonviri, Air Toxics Coordinator (Recorder)
Sonal Iyer, Risk Assessor, Office of Waste Technical Support

GUESTS PRESENT: None

Net Connect was used to link those participating by telephone.

A motion was made and seconded to approve the minutes from the July 30, 2009 meeting as written. DEQ staff will post the minutes on the Virginia Town Hall within three days of approval. See <http://www.townhall.state.va.us/L/meetings.cfm> for the minutes from previous meetings.

ACTION DEQ: Obtain studies on ethylene dibromide and n-hexane and distribute to VINTAG members for review.

DEQ obtained and distributed study information on September 1, 2009 for two chemicals (Ethylene Dibromide and n-Hexane) because a more in depth review was necessary. A

copy of a summary sheet for each pollutant was also provided by DEQ via email prior to the meeting. A copy of the summary sheet for each pollutant is attached.

Ethylene Dibromide

One member noted that there was a 10 fold difference between the EPA (9 ug/m^3) and Cal EPA (0.8 ug/m^3) number. One member expressed concern with the human study used by CAL EPA because there was some dermal exposure that couldn't be quantified and that perhaps the dermal exposure may have contributed to the sperm abnormalities. The study indicated that no respirators or other protective gear was worn by the workers. However, another member thought that there would be little opportunity for direct skin exposure. Although there must have been some dermal exposure as the field workers did exhibit moderate skin effects.

One member observed that the animal study (non dermal) used by EPA showed testicular degeneration. However, the study didn't look at sperm count. One member thought that there would need to be a compelling reason to use a less conservative number. The members agreed they could accept the hypothesis of human study but note the limitations of the data. One member thought the human study is supported by the animal study. After much discussion, the group opted to take the risk conservative approach by recommending the Cal EPA value of 0.8 ug/m^3 . The group thought it was reasonable to accept the lower limit but not necessarily the study.

n-Hexane

One member questioned whether the proteins that were reduced in the rat study used by EPA are relevant for humans. Another member noted that the decrease in proteins wasn't used as a critical effect to determine their value. Another member questioned the human study used by Cal EPA because of the co exposure with other solvents such as methyl ethyl ketone and acetone. However, one member noted that Cal EPA did not use the human studies quantitatively to develop their number.

One member pointed out that both studies showed the same dose response relationships and that the difference in the values was based on the uncertainty factors that were applied.

Because of the differences in values for Cal EPA (7000 ug/m^3) and EPA (700 ug/m^3), the group decided to look at the ASTDR value. It was noted that ASTDR uses a value of 2000 ug/m^3 which is in between the Cal EPA and EPA values.

One member commented on the duration of the animal study that Cal EPA used. The rats were exposed 6 days per week for one year. The member noted that a year long study is longer than normal and would be inclined to go with the higher (less protective) value.

One member observed that EPA used a less than lifetime uncertainty factor, but that the longer study used by Cal EPA resulted in a higher number. The member thought that the uncertainty factor used by EPA may not be necessary.

One member stated that practically speaking most industries use a hexane mixture rather than pure n-hexane because it is less expensive.

DEQ told the group that EPA typically adds a database uncertainty factor when developmental neurotoxicity and multigenerational reproductive studies are lacking. Under the most recent guidance Cal EPA will be adding these UFs also.

One member noted that it is the additional UF that makes EPA's number lower and that if the studies had the same LOAEL and NOAEL then there would be less concern about the difference in the uncertainty factors. One member stated that the animal studies are all consistent in that exposure between 200 to 500 ppm will show effects.

One member thought if we accept that the human LOAEL is 58 ppm, the value would be closer to the ASTDR value of 2118 ug/m^3 (0.6 ppm) and in this case it seems reasonable to use the intermediate number. One member wondered what the current DEQ SAAC values were. The hourly SAAC is 8800 ug/m^3 and the annual value is 352 ug/m^3 .

Another member commented that EPA's review (2005 vs. 2001 for Cal EPA) is the more recent of the two. One member thought it would be hard to justify Cal EPA's value of 7000 ug/m^3 when the current DEQ SAAC is 352 ug/m^3 .

After considerable discussion, an extensive review, and considering pros and cons of each study, the group reached consensus to recommend EPA's value of 700 ug/m^3 . One member noted that New Jersey and Michigan are also using 700 ug/m^3 .

15 minute break

Review of draft VINTAG report and spreadsheets

DEQ provided members with a copy of a draft report titled "The Virginia Inhalation Toxicology Advisory Group (VINTAG) Process and Recommendations" and referenced spreadsheets. DEQ reviewed the report with the members and members provided suggestions for revisions.

NEW ACTION DEQ: DEQ will make revisions and send out to the group for a final review. One member requested that DEQ highlight the changes that were made before sending to VINTAG members.

Each VINTAG member will send DEQ an email to acknowledge approval of the final report.

DEQ noted that the next steps will be made by DEQ and include calculating new SAAC numbers and presenting to management. These steps are all independent of VINTAG.

DEQ thanked the members for all of their time, effort, input, presentations, and the use of Net Connect.

VINTAG members commended DEQ for good time management of the project and noted that they learned a lot from this experience.

DEQ anticipates having a final report to share with DEQ management by late October or early November 2009.

Meeting adjourned at 1:00 PM